ACCESSION NR: AP4043144

A supplementary solution system is also presented wherein N is located as the intersection of three planes in space. Emphasis is placed upon accurate timing of "simultaneous" observations. Experiments are cited in which observation stations were equipped with the NAFA-3c/25c camera and timing apparatus accurate to within ± 2 milliseconds. In 1961 Echo-1 was used to establish the coordinates of a station in Karkhov. Results revealed accuracy to within ± 67, ± 86, and ± 70 meters in three rectangular coordinate directions. Additional work in 1963 under somewhat adverse conditions resulted in slightly less accurate triangulation. Mention is made of the advantages of cosmic triangulation for locating stations in hard-to-reach areas, as well as the possibilities of an international cooperative effort in utilizing the method. Orig. art. has: 2 figures.

ASSOCIATION: Astronomicheskiy sovet Akademii nauk SSSR (Astronomy Council, Academy of Sciences SSSR)

SUBMITTED: 00 ENCL: 01

SUB CODE: ES NO REF SOV: 000 OTHER: 000

Card 2/3

ACCESSION NR: AP4043144 ENCLOSURE: 01

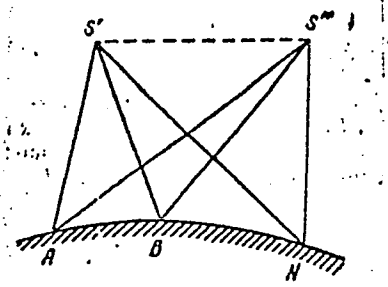

Fig. 1. Schematic for cosmic triangulation.

Card 3/3

L 00020-66 EWT(l)/EWA(h)

ACCESSION NR: AR5008081 S/0274/65/000/001/B013/B013

621.397.611

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz'. Svodnyy tom, Abs. 1B71

AUTHOR: Shchegolev, G. A.; Seliverstova, N. P.; Artem'yev, N. L.

TITLE: Magnetic system for a miniature vidicon

CITED SOURCE: Tekhnika kino i televideniya, no. 7, 1964, 65-66

TOPIC TAGS: vidicon, miniature vidicon

TRANSLATION: The deflecting-focusing magnetic system for a 9-mm diameter vidicon had to meet these requirements: (1) minimum size, (2) minimum power consumption, (3) heating not exceeding 70C, and (4) compatibility, i. e., a possibility of using it with a standard sweep generator (a conventional part of PTU outfits). The system was designed which was a miniaturized replica of FOS-34. The outside diameter was 21 mm, instead of 60 mm; the focusing-coil length, 70 mm, instead of 85 mm; definition, 400 lines, instead of 600; power consumption, under 3 w. Tests of the system with standard sweep generators and with a T-40 objective resulted in a 300-line definition picture, at an illumination of 200 lx on the object. Figs. 2.

Card 1/1 SUB CODE: EC ENCL: 00

1. SHCHEGOLEV, G. G.

2. USSR (600)

4. Leeches

7. Medicinal leeches as lithophilous organisms. Trudy Gidrobiol. ob-va No. 4 1952.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

SHCHEGOLEV, G.

Nervosism and development of the ectoderm in vertebrates. Zh. obsh. biol., Moskva 14 no.5:388-393 Sept-Oct 1953. (CIML 25:4)

1. Department of General Biology and Zoology, Ryazan' Medical Institute.

SHCHEGOLEV, Grigoriy Grigor'yevich; FEDOROVA, Mariya Stepanovna; SHASS, Ye.Yu., redaktor; SENCHILO,K.K., tekhnicheskiy redaktor

[Medicinal leeches and their application] Meditsinskaia piiavka i ee primenenie. Moskva, Gos.izd-vo meditsinskoi lit-ry, 1955. 66 p. (Leeches) (MLRA 9:1)

SHCHEGOLEV, Grigoriy Grigor'yevich

(Ryazan' Medical Inst) - Academic degree of Doctor of Biological Sciences, based on his defense, 28 June 55, in the Council of the Moscow Order of Lenin and Order of Labor Red Banner State U imeni Lomonosov, of his dissertation entitled: "Observations of ovo-stalks and the growth of ovocytes in squids."

Academic degree and/or title: Doctor of Sciences

SO: Decisions of VAK, List no. 21, 22 Oct 55, Byulieten' MVO SSSR, No. 19, Oct 56, Moscow, pp 13-24, Uncl. JPRS/NY-536

L 14720-66 EWT(m)/T DJ

ACC NR: AP6004199 (A) SOURCE CODE: UR/0069/66/028/001/0146/0150

AUTHORS: Shchegolev, G. G.; Trapeznikov, A. A.; Astakhov, I. I.

ORG: Moscow Institute for Physical Chemistry, AN SSSR (Institut fizicheskoy khimii AN SSSR)

TITLE: The influence of organic compound additives on the properties and microstructure of lithium lubricating grease model

SOURCE: Kolloidnyy zhurnal, v. 28, no. 1, 1966, 146-150

TOPIC TAGS: lithium compound, organic lubricant, organometallic lubricant, lubricant additive, lubricant property

ABSTRACT: To extend the previously published work of A. A. Trapeznikov and G. G. Shchegolev (Kolloidn. zh., 24, 104, 1962), the effect of organic additives on the stability, synergetic properties, and microstructure of lithium lubricating grease was studied. Electron-microscope photographs of the greases are presented. The dependence of the structure strength limit (Pr) and compressibility (S) of the greases as a function of the concentration of the additives (fatty acid with 6 to 18 carbon atoms in the chain, lithium oleate, and nonylic alcohol) were studied. The experimental procedure followed is described by G. G. Shchegolev, A. M. Tolmachev, and A. A. Trapeznikov (Zavodsk. laboratoriya 25, 625, 1959). The experimental results are presented in graphs and tables (see Fig. 1).

Card 1/2 UDC: 541.182.025

ACC NR: AP6004199

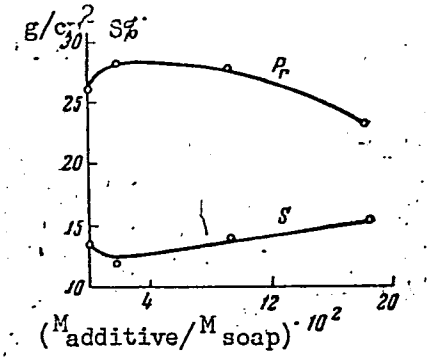

Fig. 1.

Dependence of (Pr) and (S) on the concentration nonyl alcohol additive for rapidly cooled (t_1 = 70C) grease lithium stearate - nonpolar vaseline oil.

It was found that the additives had a strengthening effect on the structure of lithium stearate grease. This effect decreased with increase in the molecular size of the additive. Lithium oleate was found to be the most effective and diphenylamine the least effective additive. From a study of electron-microscope pictures it is concluded that the strengthening effect of the additives is due to a change in the structural elements of the soap. Orig. art. has: 1 table and 4 graphs.

SUB CODE: 11/ SUBM DATE: 08Sep64/ ORIG REF: 007

Card 2/2

SHCHEGOLEV, G. G.

KONYAKIN, Sergey Fedorovich, dotsent, kand.ekon.nauk; ZKRNSHTEYN, Iosif L'vovich, dotsent, kand.ekon.nauk; KLLINSKIY, Yuriy Fedorovich, starshiy prepodavatel'; DOLITSKIY, Ya.I., prof., doktor ekon.nauk, retsenzent; DMITRIYEV-TSIBIZOV, A.A., starshiy prepodavatel', retsenzent; FROLOV, A.S., dotsent, kand.tekhn.nauk, retsenzent; KHUDYAKOV, M.K., inzh., retsenzent; ZOLOTUKHIN, Yu.A., obshchiy red., V redaktirovanii prinimali uchastiye: OGANOV, N.K., dotsent, red.; DUBCHAK, V.Kh., inzh., red.; MARTIROSOV, A.Ye., inzh., red.; KUAR'KOV, G.I., starshiy nauchnyy sotrudnik, red.; KRASNOSHCHEKOV, V.G., dotsent, kand.ekon.nauk, red.; GERASIMOV, Ye.A., inzh., red.; SHCHEGOLEV, G.G., inzh., red.; FRIL'YNSKIY, M.A., inzh., red.; KANTOR, L.M., dotsent, kand.ekon.nauk, red.; KUK'MIN, T.F., inzh., red.; FILIPPOV, K.D., red., KHOKHOLOVA, Ye.F., red.izd-va; TIKHONOVA, Ye.A., tekhn.red.

[Economics of water transportation] Ekonomika morskogo transporta. Pod obshchei red. Yu.A.Zolotukhina. Moskva, Izd-vo "Morskoi transport", 1959. 391 p. (MIRA 13:3)

(Shipping--Finance)

5(4) SOV/69-21-3-25/25

AUTHORS: Trapeznikov, A.A. and Shchegolev, G.G.

TITLE: The Effect of Some Additives on the Syneretic and Strength Properties of Lithium Grease and on its Submicrostructure

PERIODICAL: Kolloidnyy zhurnal, 1959, Vol XXI, Nr 3, pp 374-375 (USSR)

ABSTRACT: The authors present a study on the effect of lauric an nonylic acid on the structural and syneretic properties of lithium grease. A 10% lithium stereate solution in vaseline was cooled in two stages. The additives were gradually introduced into the system, previous to the dissolution of the soap. Graph 1 shows that the structural strength and oil syneresis of the system are strictly correlated, reaching respectively, maxima and minima shortly after the initiation of the process. Subsequently the curves converge and intersect, indicating decay of the

Card 1/3

The Effect of Some Additives on the Syneretic and Strength Properties of Lithium Grease and on its Submicrostructure

structure and increase of syneresis. The process is decisively determined by the quantities of acid added, maximum and minimum effect of lauric acid being on the side of less molecular interaction between additive and soap as compared to the extreme, absolutely higher, values of nonylic acid effect. The authors inserted 4 electron microscopic photographs of lithium soap microfibers with and without nonylic acid additive. The photographs show the change in size and shape in dependence on the quantities of acid. Photo 4 shows the additional effect of aging. There are 4 electron microscopic photographs, 1 graph and 4 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR - Laboratoriya oleokolloidov i monosloyev, Moskva (Institute of Physical Chemistry of the AS USSR - Laboratory of

SOV/69-21-3-25/25

The Effect of Some Additives on the Dynamic and Strength Properties of Lithium Grease and on its Submicrostructure

Oil Colloids and Monolayers, Moscow)

SUBMITTED: 10 July, 1958

Card 3/4

USCOMM-DC-61,311

AUTHORS: Trapeznikov, A. A., Shchegolev, G. G., SOV/48-23-6-27/28
Astakhov, I. I.

TITLE: An Electron-microscopical Investigation of the Influence of the Conditions of the Preparation of the Consistent Lithium Grease on Their Microstructure (Elektronnomikroskopicheskoye issledovaniye vliyaniya usloviy prigotovleniya litiyevoy konsistentnoy smazki na yeye mikrostrukturu)

PERIODICAL: Izvestiya Akademii nauk SSSR. Seriya fizicheskaya, 1959, Vol 23, Nr 6, pp 777-779 (USSR)

ABSTRACT: In the introduction to the present paper the increasing importance of consistent lithium lubricants is pointed out and it is shown that their properties depend on the nature of cooling. In the first part of the paper the material and the methods of the investigation are described and the dependence of the solid state of a 10 % isotropic solution of stearate of lithium in medical vaseline on the nature of the two-stage cooling is shown in a diagram (Fig 1). The curve has marked maxima and minima. As shown by electron-optical investigation, also the shape and size of the fiber-structure of the solution is connected with this phenomenon. Figure 3 gives

Card 1/2

nine examples of this kind; cooling methods are discussed. The solution is cooled from 230° C to a certain temperature within the range of between 230 and 0°, where this temperature is maintained for 30 minutes, after which cooling is continued. In the last part of the paper the influence of impurities upon the fiber structure is investigated. As impurity, $1.8 \cdot 10^{-2}$ mol nonylic acid was admixed per mol stearate. Figure 3 shows the effect produced by this admixture upon the fiber structure. There are 3 figures and 7 references, 3 of which are Soviet.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute for Physical Chemistry of the Academy of Sciences, USSR)
Institut elektrokhimii Akademii nauk SSSR (Institute for Electrochemistry of the Academy of Sciences, USSR)

28(5) SOV/32-25-5-44/56

AUTHORS: Shchegolev, G. G., Tolmachev, A. M., Trapeznikov, A. A.

TITLE: Apparatus for Investigating the Properties of Resistance to Deformation of Pasty Colloid Systems (Pribor dlya issledovaniya deformatsionno-prochnostnykh svoystv pastoobraznykh kolloidnykh sistem)

PERICODICAL: Zavodskaya Laboratoriya, 1959, Vol 25, Nr 5, pp 625-627 (USSR)

ABSTRACT: An apparatus is described which operates on the principle of the tangent shift of a steel lamella, which has already been used in asphalt investigations (Ref 1), etc (Refs 2-4). One of the advantages of the apparatus is that the structure of the system to be investigated is not destroyed when the corresponding substance is filled in. The apparatus (Fig 1, Draft) has a cuvette and a drive. The latter can load the measuring metal lamella either constantly or increasingly in certain intervals. The cuvette consists of two screwed metal lamellas (Fig 2) of stainless steel. The substance to be investigated is filled in a grooved indentation of the cuvette bottom where also the equally grooved measuring metal lamella is inserted. The shift of the measuring metal lamella results from the loading of the

Card 1/2

Apparatus for Investigating the Properties of Resistance to Deformation of Pasty Colloid Systems

drive via a dynamometer spring. The deformation of the dynamometer is read by means of the microscope MIR-1 with the eyepiece micrometer AM-IKh-11 with an accuracy of 2μ. There are two ways of loading, as mentioned above, whereby the results can also be plotted according to several variants. The reproducibility of parallel measurements of a 12% lithium lubricating paste and a 33% aluminum hydroxide vaseline grease paste is indicated as being 3-5% (Fig 3). There are 3 figures and 5 Soviet references.

ASSOCIATION: Institut fizicheskoy khimii Akademii nauk SSSR (Institute of Physical Chemistry of the Academy of Sciences USSR)

33541
S/069/62/024/001/003/004
B119/B101

1583

11.9400

AUTHORS: Trapeznikov, A. A., Shchegolev, G. G.

TITLE: Effect of cooling conditions of a consistent lithium grease on its properties and microstructure

PERIODICAL: Kolloidnyy zhurnal, v. 24, no. 1, 1962, 104 - 112

TEXT: Lubricating grease was produced from nonpolar vaseline oil (for medical use) and Li stearate (from TY MXП 2060-49 (TU MKhP 2060-49) stearic acid and lithium hydroxide)(vaseline oil + 10% Li stearate were mixed and heated to 230°C until attaining the isotropic state), cooled down from 230°C at various rates to various temperatures t_1, kept at the respective t_1 for 0.5 or 6 hr, and then quickly cooled down to 0°C. The cooling rates to t_1 from 40, 85, 130, 180°C were 54, 33.5 23, 15.5 deg/min. In another test series, the cooling rate was 1 deg/min, the holding time at t_1 two hours, the further cooling being performed with CO_2 snow in alcohol. The tempera-

1/3

Effect of cooling conditions ...

tures were measured with thermocouple and ЭПП -09 (EPP-09) electron potentiometer. Investigations conducted on the specimens: determination of the shearing strength, the syneretic properties (amount of oil squeezed out of the grease; 2 and 0.4 kg plungers, КСА (KSA) apparatus), electron microscopic study of the Li soap structure. Results: Within the temperature range investigated, the curves for the shearing strength and the amount of oil squeezed out are antibatic both with quick and slow cooling to t_1. With quick cooling, these curves show maxima at t_1 = 85°C and 170°C (oil amount squeezed out ~47%, and ~36%, respectively, with 2 kg plunger), and minima (shearing strength ~18 g/cm^2). A minimum of squeezed-out oil at t_1 = 130°C corresponds to a maximum of shearing strength. With slow cooling, the curves have a descending (squeezed-out oil) and an ascending course (strength). Specimens cooled quickly to t_1 = 130 - 160°C separate oil automatically. This "natural syneresis" is explained by the contraction of the structural network of the soap at the precrystalline stage, which takes place without

Card 2/3

Effect of cooling conditions ...

destroying the existing network. Electron microscopic studies conducted by the authors together with I. I. Astakhov (Ref. 11: Izv. AN SSSR. Seriya fiz. 23, 6, 777, 1959) yielded: With quick cooling, the submicrostructure of the Li stearate depends largely on t_1 and is more varied than under slow cooling conditions. The greater part of data given in this paper were published at the IV Vsesoyuznaya konferentsiya po kolloidnoy khimii (IV All-Union Conference on Colloid Chemistry) in Tbilisi, May 1958. There are 9 figures, 1 table, and 12 references: 8 Soviet and 4 non-Soviet. The four references to English-language publications read as follows: D. Evans, J. F. Hutton, J. B. Mattews, J. Appl. Chem. 2, 5, 252, 1952; W. J. Vold, J. Phys. Chem. 60, 4, 439. 1956; T. M. Doscher, R. D. Vold, J. Amer. Oil Chem. Soc. 26, 515, 1949; B. B. Farrington, R. L. Humphreys, Industr. and Eng. Chem. 31, 230, 1939.

ASSOCIATION: Institut fizicheskoy khimii AN SSSR Moskva (Institute of Physical Chemistry of the AS USSR Moscow)

SUBMITTED: December 25, 1960

Card 3/3

L 01012-66 EWT(m)/EPF(c)/T DJ

ACCESSION NR: AP5019984 UR/0065/65/000/008/0048/0055
621.892.5

AUTHOR: Shchegolev, G. G.; Trapeznikov, A. A.; Astakhov, I. I.

TITLE: Colloidal-chemical properties and microstructure of lithium lubricating greases

SOURCE: Khimiya i tekhnologiya topliv i masel, no. 8, 1965, 48-55

TOPIC TAGS: lithium, lubrication, grease, oil/ TsIATIM grease, MVP oil

ABSTRACT: The effect of cooling conditions on structural strength, pressibility, and shape and size of soap particles in lithium lubricating greases was studied. The effect which sedimentation and mechanical wearing of greases have on their properties was also investigated. In two separate series of tests, various isotropic solutions of soap in oil were slowly and rapidly cooled from the boiling state to the t_1 temperature (t_1 = 0°-175°C), held at t_1 for various durations, and then rapidly cooled to 0°C. Commercial TsIATIM-201 grease was compared against two model systems: 1. lithium stearate-partial vaseline oil, and 2. lithium stearate-MVP oil. Dependence of structural strength P_r (in g/cm^2) and pressibility S (in %) on t_1 for

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L 01012-66

ACCESSION NR: AP5019984

5

the case of rapid cooling is shown in fig. 1 of the Enclosure where curves 1 and 2 are for the lithium stearate-partial vaseline oil system, curves 3 and 4 are for the lithium stearate-MVP oil system, and curves 5 and 6 are for digested TsIATIM-201 grease. Dependence of structural strength (in g/cm^2) and pressibility (in %) on t_1 for the case of slow cooling is shown in fig. 2 of the Enclosure where curves 1 and 2 are for the lithium stearate-partial vaseline oil system, and curves 3 and 4 are for digested TsIATIM-201. The electron-microscopic examination of the grease framework indicate that the dimension and shape of soap particles closely correlate with soap phase transformations and conditions of soap crystallization. The soap phase transformations and conditions of crystallization are reflected in the structural strength and pressibility of the product grease. During sedimentations at various cooling conditions, the soap microstructure is a function of volume of the dispersed phase. It was found that mechanical wearing of greases is reflected in the cross-sectional view of grease particles and aggregates. Orig. art. has: 5 figures, 1 table.

ASSOCIATION: IFKh AN SSSR 44 55

SUBMITTED: 00 ENCL: 02 SUB CODE: MT, FP

NO REF SOV: 009 OTHER: 002

Card 2/4

L 01012-66

ACCESSION NR: AP5019984

ENCLOSURE: 01

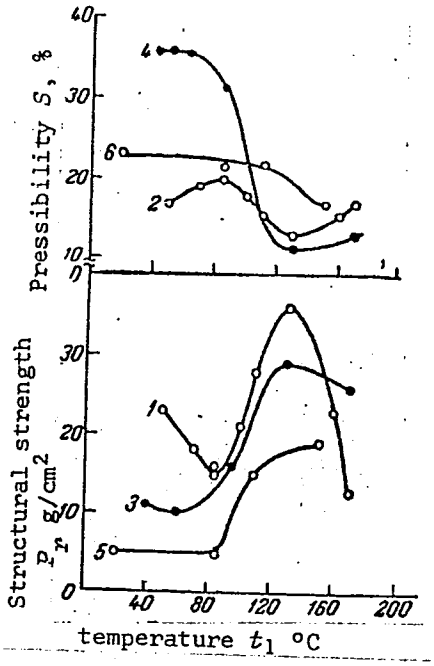


Fig. 1. P_r and S as functions of t_1 for rapidly cooled lubricants: curves 1 and 2--LiSt-partial vaseline oil; curves 3 and 4--LiSt-MVP oil; curves 5 and 6--digested TsIATIM-201 grease.

Card 3/4

L 01012-66

ACCESSION NR: AP5019984

ENCLOSURE: 02

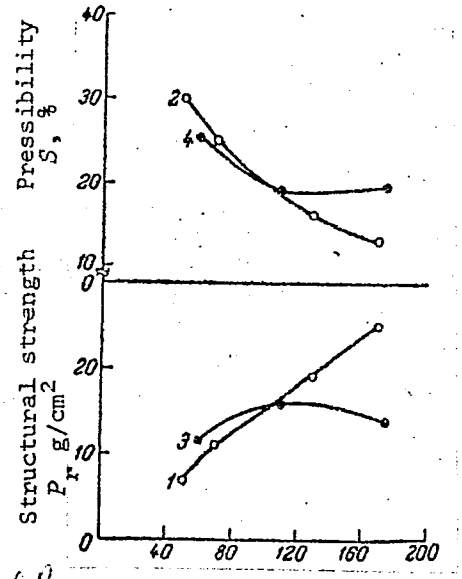
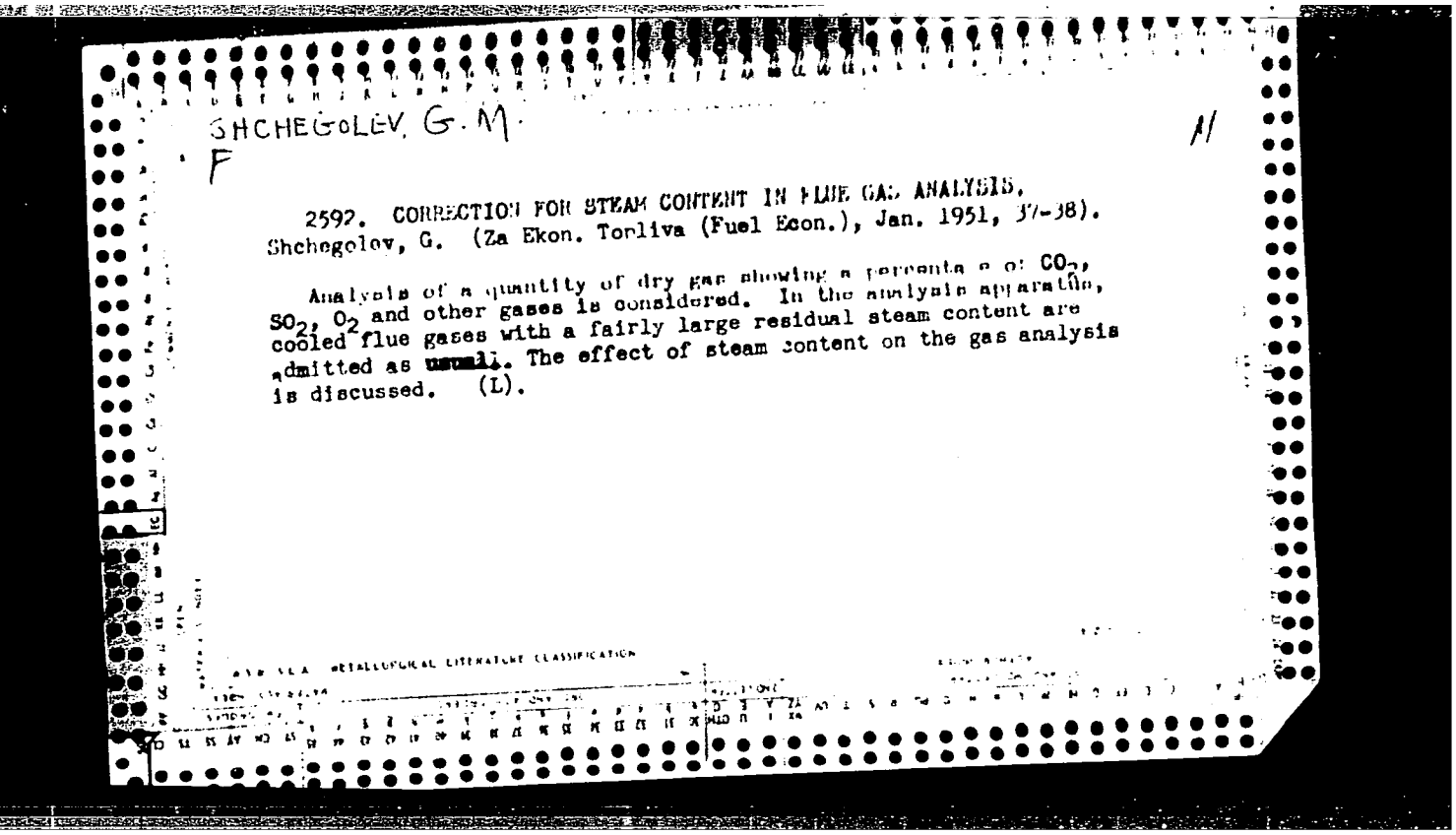


Fig. 2. P_r and S as functions of t_1 for slowly cooled lubricants: curves 1 and 2--LiSt-partial vaseline oil; curves 3 and 4--digested TsIATIM-201 grease.

Card 4/4



SHCHEGOLEV, G.M.

F

2592. CORRECTION FOR STEAM CONTENT IN FLUE GAS ANALYSIS.
Shchegolev, G. (Za Ekon. Toplivo (Fuel Econ.), Jan. 1951, 37-38).

Analysis of a quantity of dry gas showing a percentage of: CO_2, SO_2, O_2 and other gases is considered. In the analysis apparatus, cooled flue gases with a fairly large residual steam content are admitted as usual. The effect of steam content on the gas analysis is discussed. (L).

CHERNOBYL'SKIY, I.I., prof.doktor tekhn.nauk; SHCHEGOLEV, G.M., kand.tekhn. nauk

Experimental investigation of the mixing of streams in transverse flow. Trudy Inst.tepl.AN URSR no.7:8-20 '52. (MIRA 13:5)
(Aerodynamics) (Burners)

Shchegolev, G M.

The material and heat balance of semicoking of non-agglomerated Ukrain. S.S.R. brown coal by using solid heat carriers. V. I. Tolubinskii, G. M. Shchegolev, G. L. Babukha, and S. B. Kaufman. *Akad. Nauk Ukr. S.S.R., Inst. Teploenergel., Sbornik Trudov* 1955, No. 11, 28–30.—A substitute method for the direct combustion of Ukrainian brown coal was investigated; low-temp. carbonization reduced the coal-prepn. costs and recovered the by-products. The cost of the low-temp. carbonization plant was low, i.e. of the same order as coal pulverization. The gas produced will have a high B.t.u., and the char produced will be of immediate use as powd. fuel. An examn. of the heat and material balance confirms the belief that carbonization with solid heat carriers will permit a rational brown-coal utilization, with the production of considerable amt. of motor fuel, high B.t.u. gas, and valuable chemicals. The principal increase in the installation costs will be due to by-products-refining installation. W. M. Sternberg

TOLUBINSKIY, Vsevolod Ivanovich; SHCHEGOLEV, German Mikhaylovich; RABINOVICH, Mikhail Iosifovich; KUZNETSOV, Vladimir Ivanovich; TOLUBINSKIY, V.I., redaktor; TITKOV, B.S., redaktor izdatel'stva; SKLYAROVA, V.Ye., khudozhestvennyy i tekhnicheskiy redaktor

[Use of local fuels for industrial power engineering] Energotekhnologicheskoe ispol'zovanie mestnykh topliv. Pod obshchei red. V.I. Tolubinskogo. Kiev, Izd-vo Akad. nauk USSR, 1956. 128 p. (MLRA 10:4)
(Fuel) (Power engineering)

SHCHEGOLEV, G. M.

"Lay more stress upon the use of coal and other solid fuels for the production of polymeric material"

report presented at the cession of the Presidium of the Council for Coordination of Scientific Work of the Academies of Sciences of Union Republics and Branches (on Development of Researches on Highly Molecular Compounds) 21 June 1958. (Vest. Ak Nauk SSSR, 1958, No. 9, pp. 101-104)

Head of the Institute of Heat Energetics of the Academy of Sciences, Ukrainian SSR

11(7) SOV/170-59-5-12/18

AUTHOR: Shchegolev, G.M.

TITLE: Properties of the Thermal Decomposition Process of Fuels by a Solid Heat Transfer Medium (Osobennosti protsessa termicheskogo razlozheniya topliv tverdym teplonositelem)

PERIODICAL: Inzhenerno-fizicheskiy zhurnal, 1959, Nr 5, pp 93-96 (USSR)

ABSTRACT: There is a theory of Z.F. Chukhanov [Ref 1,2] according to which thermal decomposition of fuels can be controlled with respect to the yield and quality of decomposition products, if the process runs at a high rate. Another factor affecting the results of decomposition is the properties of a heat transfer medium employed. In order to investigate effects of this latter factor, the author carried out experiments in a specially laboratory device with decomposition of various fuels and using fine-grained coke as a heat transfer medium. The temperature maintained was 510°C. The results of experiments are compiled into Tables 1 and 2. The inspection of these tables shows that the coke absorbs considerable amount of tar in the thermal treatment

Card 1/2

SHCHEGOLEV, G.M. [Shchoholiev, H.M.]

Use of a solid heat conductor in the heat treatment of coal subject to caking. Dop.AN URSR no.10:1372-1375 '60. (MIRA 13:11)

1. Institut teploenergetiki AN USSR. Predstavleno akademikom AN USSR I.T.Shvetsom.

(Coal--Carbonization)

SHCHEGOLEV, German Mikheylovich; YASHIN, Aleksandr Viktorovich; LAVROV, Petr Ivanovich, kand. tekhn. nauk, otv. red.; PECHKOVSKAYA, O.M., red.; DAKHNO, Yu.N., tekhn. red.

[Low temperature ashing of fuels]Nizkotemperaturnoe ozolenie topliv. Kiev, Izd-vo Akad. nauk USSR, 1962. 49 p. (MIRA 15:10)

(Ash (Technology))

SHVETS, I.T., akademik, [illegible] red., DAL', V.I., doktor tekhn. nauk, red.; SHCHEGOLEV, G.M., kand. tekhn. nauk, zam. otv. red.; OSTROVSKIY, S.B., red.; LAVROV, P.I., kand. tekhn. nauk, red.; LANDSMAN, S.U., kand. tekhn. nauk, red.; KUZNETSOV, V.I., kand. khim. nauk, red.; SUSHON, S.P., inzh., red. DAKHNO, Yu.B., tekhn. red.

[Complete utilization of Ukrainian solid fuels]Kompleksnoe ispol'zovanie tverdykh topliv Ukrainy. Kiev, Izd-vo AN USSR, 1962. 287 p. (MIRA 15:11)

1. Akademiya nauk U.S.S.R., Kiev. Rada po vyvchennyu produktyvnykh syl U.S.S.R. 2. Akademiya nauk Ukr.SSR (for Shvets). 3. Nachal'nik otdela toplivnoy promyshlennosti Gosudarstvennogo planovogo komitata Soveta Ministrov Ukr. SSR (for Ostrovskiy). 4. Institut teploenergetiki Akademii nauk Ukr.SSR (for Shchegolev, Sushon).

(Ukraine--Fuel)

SHCHEGOLEV, G.M. [Shchoholiev, H.M.], kand. tekhn. nauk

Thermal processing of solid fuels. Kompl. vyk. pal.-energ. res. Ukr. no.1:72-91 '59. (MIRA 16:7)

1. Institut teploenergetiki AN UkrSSR.
(Coke) (Carbonization)

ZHCHEGOLEV, G. M. (Institute of Technical Thermal Physics of Academy of Sciences of Ukrainian SSR)

"Report on Thermodynamic Analysis of Open Cycle MGD-Generators."

Report presented at the Section on Thermodynamics, Scientific Session, Council of Acad. Sci. Ukr SSR on High Temperature Physics, Kiev, 2-4 Apr 1963.

Reported in Teplofizika Vysokikh temperatur, No. 2, Sep-Oct 1963, p. 321, JPRS 24,651. 19 May 1964.

ACCESSION NR: AT4042317 S/0000/63/003/000/0381/0388

AUTHOR: Milleryan, T. Ye., Pol'skiy, N.I., Shchegolev, G.M.

TITLE: Unidimensional idealization and its application to the finding of optimal operational modes of magnetogasdynamic apparatus

SOURCE: Soveshchaniye po teoreticheskoy i prikladnoy magnitnoy gidrodinamike. 3d, Riga, 1962. Voprosy* magnitnoy gidrodinamiki (Problems in magnetic hydrodynamics); doklady* soveshchaniya, v. 3. Riga, Izd-vo AN LatSSR, 1963, 381-388

TOPIC TAGS: magnetogasdynamics, gas dynamics, hydromagnetics, idealization, unidimensional idealization

ABSTRACT: The authors call attention to the fact that, despite the large number of published works dealing with the use of unidimensional schemes in the study of magnetogasdynamic flows in channels, there is a frequent failure to bear in mind the assumptions on the basis of which the equations of the unidimensional system were derived. As a result, there is no indication of the real flows, to the study of which the results of the investigation of the obtained equations are applicable. The present article contains some comments on stationary flows in connection with this problem. The authors note that the equations of unidimensional magnetogasdynamics are normally derived from the full system

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of equations with the following additional assumptions: 1. the volumetric electromagnetic force F acts only in the direction of the flow (for example, along the x axis); 2. all components of electromagnetic values B = H, E, j depend only on x; 3. The magnetic field preserves its direction along the flow (for example, along the z axis), while the electrical field E and the density vector of the current j are directed along the y axis; that is, vectors u, B and E are mutually perpendicular and the flow occurs in crossed fields. From assumptions 1 and 2 it follows that in the case of a force F, not equal to zero, vector B must have only two components B_y and B_z. In the case of a sufficiently large magnetic Reynolds number Re_m it also follows from assumptions 1 and 2 that the ratio $B_y:B_z$ remains unchanged along the flow. If the flow of a nonviscous gas satisfies conditions 1 - 3, the motion and induction equations take on the following form:

$$\rho uu' + p' = -\frac{1}{2\mu}(B^2)'; \quad \mu j = B' = \mu\sigma(uB - E). \qquad (1)$$

Initial and boundary conditions are discussed. The authors note that in some investigations a unidimensional system is used on the supposition that the magnetic Reynolds

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number is small, while the induction of the applied magnetic field is a given function of B(x). They show, however, that these two postulates are incompatible in a unidimensional approximation. From the general equation of magnetogasdynamics, with assumption 1 - 3, it follows that E = const. along the channel; if, in a rectangular channel, the electrodes, arranged at a distance y_o, are ideal conductors and closed through the external net, there will arise on them a potential difference $U = Ey_o$. The following question is posed and discussed in the paper: In which of the two cases - U = const. or E = const. - does the unidimensional system more accurately describe the actual behavior of the flow. In the authors' view, properly organized experimentation would permit the development of a unidimensional system of magnetogasdynamic diffusor flows, much in the same manner as this has already been done for a case in which no magnetic field is present. The solution of the equation system of the unidimensional approximation is also considered. It is noted that with the variational problem formulated one way or the other, a system of ordinary differential equations can be obtained, the solution of which will provide the unknown optimum. In the opinion of the authors, the most important point is the selection of premises which render possible the application of the unidimensional system. For an elucidation of this question, they discuss the simplest problem of finding an isothermic generator of maximum power on the condition that the flow velocity along the channel is constant. In accordance with their previous development of the subject, the authors assume that the induction of the magnetic field B remains unchanged along the channel,

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with the channel having a constant width z between the poles of the magnet. An analysis is made of the power of the same generator on the assumption that $E = \frac{U}{y} = \text{const}$. In the examples given in the article, it is also possible to consider the dependence of the conductivity on the pressure. In each case, this has no effect on the qualitative character of the relations obtained. The effect of friction is also discussed for the case of $\overline{U} = \text{const}$. Having determined the optimal operational regimes of a magnetogasdynamic apparatus on the assumption that T and u are constant, the authors point out that all the considerations presented in the article can also be extended to cases in which the constancy of T and u is not assumed. The proper formulation of the variational problem makes it possible to reduce the task of finding the optimal mode to the solution of a system of ordinary differential equations. At the present state of the computer art, the solution of such a system presents no particular difficulties. The authors emphasize that the solution of such problems is meaningful only if there is some degree of certainty that the assumptions, or which the unidimensional idealization is based, are sufficiently justified. The examples considered in the article indicate that the effect of the particular assumptions on the characters of

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the final solution is extremely significant. A determination of the degree of justification of specific hypotheses in a unidimensional system is impossible within the framework of the system itself. Here what is required is either experimentation or a sufficiently thorough theoretical analysis of plane and three-dimensional flows. Orig. art. has: 3 figures and 8 formulas.

ASSOCIATION: none

SUBMITTED: 04Dec63 ENCL: 00 SUB CODE: ME

NO REF SOV: 003 OTHER: 002

Card 5/5

ACCESSION NR: AP4017724 S/0294/63/001/003/0443/0448

AUTHOR: Shchegolev, G. M.

TITLE: Thermodynamic features of high temperature open cycles

SOURCE: Teplofizika vy*sokikh temperatur, v. 1, no. 3, 1963, 443-448

TOPIC TAGS: gas turbine, gas turbine cycle, high temperature cycle, high pressure cycle, magnetohydrodynamic generator, dissociation of working gas, cycle efficiency, binary cycle

ABSTRACT: Some peculiarities of high-temperature gas turbine cycles (above 1800C) are considered in view of the use of such cycles for magnetohydrodynamic generators. Foremost among these effects is the dissociation of the working gas, and among the difficulties this raises is the decrease in cycle efficiency. Although an increase in the pressure of the high-temperature cycle restores some of the efficiency loss, it limits the application of the equip-

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ACCESSION NR: AP4017724

ment to use in tandem with steam generators (the exhaust gas temperature is made higher by the increase in pressure). It is concluded that such a combination of a high temperature gas turbine with exhaust feeding a steam turbine can also result in a fuel economy. Another promising improvement is to use air with an increased oxygen content (to 30%). Since the fuel calorific value is increased thereby by about 40%, any method of obtaining cheap enriched air with oxygen would have great economic benefits. Orig. art. has: 4 figures and 5 formulas.

ASSOCIATION: Institut teploenergetiki AN UkrSSR (Institute of Heat and Power Engineering, AN UkrSSR)

SUBMITTED: 27Apr63 DATE ACQ: 23Mar64 ENCL: 00

SUB CODE: PH NR REF SOV: 001 OTHER: 000

Card 2/2

TOLUBINSKIY, V.I., otv. red.; FEDOSEYEV, V.A., doktor fiz.-mat. nauk, zam. otv. red.; DORFMAN, A.Sh., kand. tekhn. nauk, red.; DUSHCHENKO, V.P., kand. fiz.-mat. nauk, red.; DYBAN, Ye.P., kand. tekhn. nauk, red.; KREMNEV, O.A., doktor tekhn. nauk, red.; NAZARCHUK, M.M., kand. tekhn. nauk, red.; ORNATSKIY, A.P., kand. tekhn.nauk, red.; PAVLOVICH, V.P., doktor tekhn. nauk, red.; SEVETS, I.T., kand. tekhn. nauk, red.; SHCHEGOLEV, G.M., kand. tekhn. nauk, red.; SHCHERBAN', A.N., akademik, red.; SYTNIK, M.K., red.

[Thermophysics and heat engineering] Teplofizika i teplotekhnika. Kiev, Naukova dumka, 1964. 339 p.
(MIRA 18:1)

1. Akademiya nauk URSR, Kiev. Instytut tekhnichnoy teplofizyky. 2. Institut tekhnicheskoy teplofiziki AN Ukr.SSR, Kiev (for Dorfman, Dyban, Nazarchuk, Tolubinskiy, Shchegolev). 3. Kiyevskiy tekhnologicheskiy institut pishchevoy promyshlennosti (for Dushchenko, Pavlovich). 4. Kiyevskiy politekhnicheskiy institut (for Ornatskiy).

(Continued on next card)

TOLUBINSKIY, V.I.--- (continued). Card 2.

5. Odesskiy universitet (for Fedoseyev). 6. Kiyevskiy universitet (for Shvets). Akademiya nauk Ukr.SSR (for Shcherban', Shvets). 7. Chlen-korrespondent AN Ukr.SSR (for Tolubinskiy). 8. Gosudarstvennyy komitet Soveta Ministrov po koordinatsii nauchno-issledovatel'skikh rabot (for Shcherban').

SPIVAKOVSKIY, German Nikhaylovich; POSTNIKOV, I.M., doktor tekhn. nauk, prof., otv. red.; SPIVAK, G.I., red.

[Thermodynamic analysis of high-temperature open cycles] Termodinamicheskii analiz vysokotemperaturnykh razomknutykh tsiklov. Kiev, Naukova dumka, 1964. 61 p. (MIRA 18:?)

ACCESSION NR: AP4024189 S/0294/64/000/001/0053/0057

AUTHOR: Pol'skiy, N. I.; Shchegolev, G. M.

TITLE: Isothermal flow of conducting gas in channels

SOURCE: Teplofizika vy*sokikh temperatur, 2 no. 1, 1964, 53-57

TOPIC TAGS: magnetohydrodynamics, isothermal conducting gas flow, one dimensional gas flow, channelled conducting gas flow, flow in crossed fields, power generation, effect of induced field, Reynolds number, magnetic Reynolds number, electric field variation, friction effect

ABSTRACT: Although the one-dimensional differential equations for the stationary flow of a conducting gas in crossed fields are known and can be solved numerically for specified boundary conditions, it is shown to be advisable to check, before undertaking the laborious calculations, that the flow in question can actually be described by theoretical equations, since the accuracy of the one-dimensional scheme cannot exceed the accuracy with which the electric field intensity or the induced field is maintained constant or the

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ACCESSION NR: AP4024189

extent to which the magnetic Reynolds number remains small. The author therefore derives in dimensionless form, by variational means, relations for the extremal values of the power generated by the stream, the pressure ratio, and the electric field intensity. The effects of the induced magnetic field (the magnetic Reynolds number), of the pressure dependence of the conductivity, and of friction are also taken into account. It is pointed out that for isothermal flow with constant velocity the dimensionless field intensity is a measure of the thermal efficiency and that the dimensionless pressure ratio is a measure of the channel broadening. 'The authors are grateful to Z. P. Bogdanovich and T. Ye. Milleryan for performing all the calculations connected with this work.' Orig. art. has: 3 figures and 22 formulas.

ASSOCIATION: Institut tekhnicheskoy teplofiziki AN UkrSSR (Institute of Technical Thermophysics, AN UkrSSR)

SUBMITTED: 27Sep63 DATE ACQ: 16Apr64 ENCL: 01

SUB CODE: PH NO REF SOV: 000 OTHER: 000

Card 2/3

RAZEYEV, Ye.T.; BELOKON', S.M.; FILONENKO, Yu.Ya.; SHCHEGOLEV, G.M.

Dust removal from gases in the precondensers of industrial power systems. Khim. i tekh. topl. i masel 10 no.3:37-41 Mr '65. (MIRA 18:11)

L 02339-67 EWP(k)/EWP(d)/EWT(m)/EWP(h)/EWP(1)/EWP(v)/EWT(t)/ETI

ACC NR: AP6030634 SOURCE CODE: UR/0413/66/000/016/0132/0132

34

INVENTOR: Shcheglov, G. M.

ORG: none

TITLE: Tool for pressing shapes with varying cross ections. Class 49, No. 185189

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 16, 1966, 132

TOPIC TAGS: metal pressing, die insert, die

ABSTRACT: An Author Certificate has been issued for a tool for pressing shapes of varying cross sections. The tool consists of a die with a insert mounted in it. To simplify its adjustment during the process of pressing the insert is made to move its shape conforming to the shape of the product to be pressed; slide blocks are mounted into the die to limit the insert's movement. Orig. art. has: 1 figure. [Translation] [NT]

Card 1/2 UDC: 621.777.2

ACC NR: AP6033034

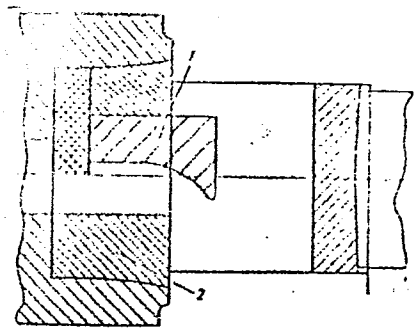

Fig. 1. Instrument for pressing shapes of varying cross-sections
1—Insert; 2—die.

SUB CODE: 13/ SUBM DATE: 22Sep61/

Card 2/2

SHCHEGOLEV, G.P.

Standardization control of technical specifications of the basic production. Standartizatsiia 25 no.11:39-40 N '61. (MIRA 14:11)

(Standardization)

SHCHEGOLEV, G.S., kandidat tekhnicheskikh nauk

Heat effect obtained through semicoking. Trudy Inst. tepl. AN URSR no.8:144-155 '52. (MLRA 8:7)
(Coke) (Heat engineering)

[illegible]

Turbines

Gigantic water turbines. Nauk i zhizn' 19, No. 8, 1952.

9. Monthly List of Russian Accessions, Library of Congress, November 1952. Uncl.

SHCHEGOLEV, Gleb Stepanovich; GARKAVI, Yudel' Yel'yevich; SMIRNOV, M.I., dotsent, retsenzent; ORGO, V.M., inzhener, retsenzent; GRANOVSKIY, SLA., kandidat tekhnicheskiy nauk, redaktor; VASIL'YEVA, V.P., redaktor izdatel'stva; GOFMAN, Ye.K., redaktor izdatel'stva; POL'SKAYA, R.G., tekhnicheskiy redaktor

[Hydroturbines and their adjustment] Gidroturbiny i ikh regulirovanie. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1957. 349 p. (MIRA 10:10)
(Turbines)

114-11-6/10

AUTHOR: Shchegolev, G.S., Engineer.

TITLE: The Development of Water Turbine Construction Over the Last 40 Years. (Razvitiye gidroturbostroyeniya za 40 let.)

PERIODICAL: Energomashinostroyeniye, 1957, Vol.3, No.11, pp.27-31 (USSR)

ABSTRACT: The article commences with a general historical review of the development of water turbines in the USSR since the manufacture of two water turbines of 370 and 55 kW in 1924. In the 23 years that elapsed between the manufacture of the first 295 kW Kaplan turbine in 1930 and the manufacture of the 126 MW turbine for the Kuybyshev Station in 1953, Soviet scientists and engineers have developed the theory of designing the blades of axial turbines so that tests on laboratory models can be used in the design of wheels for all heads between about 3 and 45 m. These runners are all very efficient and the turbines have good resistance to cavitation.

The development of water turbines has several times occurred in large single steps rather than by continuous steady development. This is demonstrated by tabulated characteristics of the turbines for the Kuybyshev and Shcherbakov Power Stations. These turbines are of much the same diameter but in weight and particularly in output there is a notable difference. Moreover,

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The Development of Water Turbine Construction Over the Last 40 Years.

a large number of turbines was required for the Kuybyshev Station and a further 22 similar machines are required for the Stalingrad Station. Therefore, for the first time in the manufacture of water turbines, it is necessary to consider the production of a large number of identical turbines. In the manufacture of the Kuybyshev turbines, extensive use was made of welded construction. Not all the problems could be solved at once. For instance, the possibility of making the shaft with welded flanges was considered from the start, but it could not be accomplished until the technique of electro-slag welding had been developed. The development of the use of welded construction in water turbines is discussed. The general tendency is to use welding in place of steel casting. It is probable that in the future, use will be made of forged and welded shafts consisting of two forgings welded together by a longitudinal seam. The first such shafts are now being manufactured at the Leningrad Metal Works (LMZ) and the Kharkov Turbine Works (XTZ).

The tendency to reduce the weight of the machines continues but it becomes ever more difficult to make substantial improvements. The use of Kaplan turbines for still higher heads will make it possible to reduce the weight of the equipment by

 increasing the speed of the machines. However, a great deal of

development work will be required to achieve this object. When the head is increased, it is necessary to increase the number of blades on the runner and it is then more difficult to accommodate the blade-rotating mechanism. This problem cannot be solved only by changing the design; it is also necessary to use higher stresses so that more accurate knowledge of the operating forces is required. Design work has been done on the mechanism that rotates the guide vanes. This work resulted in the development of a mechanism, the force characteristics of which best correspond to those of the blade shifting mechanism. Curves of the hydraulic torque, the moment of friction and the operating torque of the servo-motor for a guide-vane mechanism are given in Fig.3. Diagrams of the corresponding mechanism are given in Fig.4. A measure of the development of Soviet technology in water turbines is that when the Dneproges Station was first built, foreign turbines had to be used because the Soviet industry was unable to manufacture suitable machines. When the station was reconstructed after the war, the Soviet industry was capable of dealing with the task and made six of the turbines, the other three being manufactured by the American firm of Newport News. The efficiency curves given in Fig.5 show that the Soviet turbines are more efficient than the American one.

The Development of Water Turbine Construction Over the Last 40 Years.

A major task at the present time is to manufacture high speed Kaplan turbines for heads of the order of 100 m for installation on Siberian rivers. This is particularly difficult because the outputs will be 200 - 300 MW per set. Outputs of this magnitude require the largest possible turbines with runners about 6 m in diameter. Until recently, the two halves of the runner were joined by a ring shrunk on during erection, as illustrated in Fig.6. However, such rings for the Siberian turbines would be outside the railway loading gauge and it is necessary to join the two halves of the runner by some other method such as welding or the use of keys. One design of key developed at the Syzran' Works (Syzranskiy Zavod) is illustrated in Fig.7. It will also be difficult to cast such large runners and it may be best to make the parts separately and weld them together. All these questions depend on the ability to make accurate calculations on the strength of runners. This is very difficult because of their complexity and much experimental work will be required. The development of high head Kaplan turbines is associated with the development of materials that are resistant to wear because of the presence of abrasive particles in the water. The Leningrad Metal Works has built a turbine of 55 MW for a head of 290 m

Card4/5 which is working very satisfactorily and is now developing

SHCHEGOLEV, G.S., inzh.

Technical progress in the construction of hydraulic turbines at the Leningrad Metalworking Plant during the current seven-year plan. Energomashinostroenie 6 no.3:1-4 Mr '60. (MIRA 13:6)
(Leningrad--Hydraulic turbines)

SHCHEGOLEV, G.S.

Contribution of the builders of electric power machines. Nauka i zhizn' 27 no. 4:10-14 Ap '60. (MIRA 14:5)
(Hydroelectric power stations)

KOVALEV, Nikolay Nikolayevich; SHCHEGOLEV, G.S., inzh., retsenzent; EDEL', Yu.U., kand. tekhn. nauk, red.; SIMONOVSKIY, N.Z., red. izd-va; YURKEVICH, M.P., red. izd-va; POL'SKAYA, R.G., tekhn. red.

[Hydraulic turbines; design and construction] Gidroturbiny; konstruktsii i voprosy proektirovaniia. Moskva, Mashgiz, 1961. 614 p. (MIRA 15:2)
(Hydraulic turbines—Design and construction)

SHCHEGOLEV, Gleb Stepanovich; IVANITSKIY, V.Yu., red.; ATROSHCHENKO, L.Ye., tekhn. red.

[The largest hydroelectric power station in the world] Samaia moshchnaia v mire. Moskva, Izd-vo "Znanie," 1962. 15 p. (Novoe v zhizni, nauke, tekhnike. IV Seriia: Tekhnika, no.20) (MIRA 15:12)

1. Glavnyy konstruktor gidroturbin Leningradskogo metallicheskogo zavoda imeni XXII s"ezda Kommunisticheskoy partii Sovetskogo Soyuza (for Shchegolev).
(Bratsk Hydroelectric Power Station)

ZHMUD', Adol'f Yelizarovich [deceased]; KANTOVSKIY, V.K., retsenzent; RAUD, M.A., red.; SHRIRO, I.I., red.; SHCHEGOLEV, G.S., red.; MATARCHUK, G.A., red.izd-va; SPERANSKAYA, O.V., tekhn. red.

[Screw pumps with cycloid engagement]Vintovye nasosy s tsikloidal'nym zatsepleniem. Izd.3., perer. i dop. Moskva, Mashgiz, 1963. 153 p. (MIRA 16:3)
(Pumping machinery)

SHCHEGOLEV, G.S., inzh.

Welded structures in hydraulic turbine construction. [Trudy]LMZ no.11: 129-139 '64. (MIRA 17:12)

SHCHEGOLEV, G.S., inzh.

Development of hydraulic turbines in the Leningrad Metalworking Plant (2nd Congress of the CPSU) in the past 40 years and its future objectives. Energomashinostroenie 11 no.3:1-3 Mr '65. (MIRA 18:6)

SHCHEGOLEV, G.S., inzh.

Means for improving the manufacture of hydraulic turbines.
[Trudy] LMZ no.10:7-14 '64. (MIRA 18:12)

KOSENKO, A.; SHCHEGOLEV, I.

Magnetic antenna. Radio no.8:47-49 Ag '54. (MLRA 7:8)
(Radio--Antennas)

SHCHEGOLEV, I.

Make use of these devices. IUn.tekh. 5 no.1:74 Ja '61. (MIRA 14:5)
(Pumping machinery)

SHCHEGOLEV, I.

Manual gain control. Radio no.8:45 Ag '62. (MIRA 15:8)
(Transistor radios)

7(7),7(5)

AUTHOR: Shchegolev, I. F. SOV/20-123-1-16/56

TITLE: The Ratio Signal/Noise in a Regenerative Detector of Nuclear Paramagnetic Resonance (Otnosheniye signal/shum v regenerativnom detektore yadernogo paramagnitnogo rezonansa)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 1, pp 64-67 (USSR)

ABSTRACT: This report intends to show the following: The main sources of the noises in the bridge scheme and in the regenerative scheme are of totally different character. In the bridge scheme it is the thermal noises in the circuit, whereas in the regenerative scheme the noises are mainly due to the slow fluctuations of the slope of the tube. Such fluctuations are caused by the flicker effect and other similar effects. For the analysis of these phenomena the most simple generator system can be investigated. If the frequency of generation ω approaches the resonance frequency ω_0 , the sample absorbs additional energy as a result of nuclear resonance, and the amplitude of generation decreases.

If the constant magnetic field H_o is modulated with a low frequency Ω, also voltage in the circuit is modulated $v = (U_o + U_{co}\sin\Omega t)\sin\omega t$. U_{co} denotes the signal of nuclear resonance and depends essentially on the frequency $\omega - \omega_o$.

Next, an expression is written down for the maximum effective value of the signal amplitude. The existence of different noise sources in the circuit causes fluctuations of the amplitude of generation, and these fluctuations cause the noise, before the background of which the signal of nuclear resonance is observed. Equations are written down for the purpose of calculating the spectral density of these fluctuations. Also tube noises are taken into account. An equation for amplitude fluctuations and an expression for spectral density are derived. In order to find out which term in the formula for noise voltage plays the most important part, the dependence of noise voltage in the generator circuit on the amplitude of generation was recorded. Carrying out these measurements is described in short and results are shown by a diagram. The noise voltage is inversely

proportional to the amplitude of generation. Thus, the noises due to the slow fluctuations of the slope of the tube are the main source of the noises in the regenerative detector. The ratio between signal and noise increases with a decrease of the amplitude of generation, and in the case of sufficiently small amplitudes it ceases to be dependent on it. Moreover, this ratio does not depend directly on the Q-factor of the circuit. With conditions otherwise being equal, it is necessary to reduce the Q-factor for the purpose of increasing this ratio. This is, however, not the best procedure for bringing about an increase of the ratio between signal and noise. It is much more satisfactory to decrease the amplitude of generation by increasing the capacity C of the circuit or by reducing the feedback coefficient c. In order to obtain the maximum value of the ratio between signal and noise, it is necessary, as far as this is possible, to increase the slope of the tube and of the circuit. The author thanks Academician P. L. Kapitsa for his

constant interest in this work, and S. P. Kapitsa for discussions. There are 4 figures and 5 references, 2 of which are Soviet.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute for Physical Problems of the Academy of Sciences, USSR)

PRESENTED: June 16, 1958, by P. L. Kapitsa, Academician

SUBMITTED: June 10, 1958

SHCHEGOLEV, I. F., CAND PHYS-MATH SCI, "NUCLEAR MAGNETIC RESONANCE IN METALLIC TIN AND THALLIUM." MOSCOW, 1961 (MIN OF HIGHER AND SEC SPEC ED RSFSR. LENINGRAD STATE UNIV). (KL-DV, 11-61, 210).

24.7900 1144, 1350-1160
5.4130 1273, 1242, 1043

S/056/61/040/001/001/037
B102/B204

AUTHORS: Karimov, Yu. S. and Shchegolev, I. F.

TITLE: Hyperfine interaction in the diphenyl picryl hydrazyl molecule

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 1, 1961, 3-9

TEXT: The interaction between nuclei and unpaired electrons in the molecules of free radicals has repeatedly been studied, but, above all, via electron paramagnetic resonance, although in this way less exact results are obtained than by the nuclear resonance method. The free radical diphenyl picryl hydrazyl acts as a standard substance in electron paramagnetic spectroscopy; using this radical, the authors studied the proton resonance line structure in connection with the interaction between unpaired electrons and protons, and, in the present paper, they give a report on the results obtained. The studies were carried out with two polycrystalline specimens; one came from A. Ye. Arbuzov's laboratory, and the other from France, placed at the author's disposal by V. M. Chibrykin. Proton resonance was recorded by a regenerative detector and, after amplification and synchronous detec-

tion, by a recording potentiometer of the type ЭПП-09 (EPP-09). Measurements were carried out with a magnetic field of 935 oe (generated by a permanent magnet); measurements were carried out also at higher field strengths (electromagnetically generated, 2000 oe and more). The modulation frequency was 30 cps, the modulation depth, ~1.5 oe; the time constant of the phase detector was 10 sec. Measurements are graphically shown: Fig. 2 shows the typical curves recorded in a field of 935 oe at 4.2, 2.5, and 1.55°K; Fig. 3 shows the integral proton resonance curves at 935 oe and different temperatures. Similar curves were obtained at 2000 oe. This shows that the proton spectrum consists of four components: one of them has the position of the unshifted proton line, one is shifted toward lower frequencies, and two toward higher frequencies. The width of the central line is practically independent of H/T, whereas the lateral lines increase with growing H/T. Another diagram shows that the shift $\Delta\nu$ is a linear function of H/T, which indicates that $\Delta\nu$ is due to the paramagnetism of the unpaired electrons. The numerical values of the lateral line intensities are (with an error of 15-20%) given in the table. The relative intensity of the lateral lines is independent of temperature ([redacted] given H-value), but quickly decreases with growing H (to about 2000 oe); with a further increase up to 5000 oe it de-

creases less quickly. At 5000 oe, such measurements were carried out at 77°K; here, the resonance line was asymmetric, and the lateral lines were weak, but more intense than at helium temperature (with the same field). The ratio between the intensities of the individual lines at 935 oe is 1:2:3:11, and at 2000 oe, it is 1:2:3:25. In agreement with theoretical considerations, the two protons of the picryl group may be ascribed to line No. 1 (I_1), the four of the m-phenyl group to line No. 2 (I_2), and the six of the o- and p-phenyl groups to line No. 3 (I_3). The intensity of the central line can, as is argumented, only partly be ascribed to the existence of nonmagnetic impurities; their occurrence is unexpected, and their origin cannot be explained. The authors thank Academician P. L. Kapitsa for his interest, and A. S. Borovik-Romanov for discussions. There are 5 figures, 2 tables, and 11 references: 1 Soviet-bloc and 10 non-Soviet-bloc.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute of Physical Problems, Academy of Sciences USSR)

SUBMITTED: June 22, 1960

Card 3/6

S/056/61/040/005/002/019
B102/B201

24.7900

AUTHORS: Karimov, Yu. S., Shchegolev, I. F.

TITLE: Nuclear resonance of Sn^{119} in metallic tin

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 40, no. 5, 1961, 1289 - 1292

TEXT: The authors studied the problem of the anomalous line width of nuclear magnetic resonance and of line asymmetry in metallic tin to check the explanation of this effect given by Bloembergen and Rowland (Acta Metallurgica, 1, 731, 1953); these authors believed the cause to be an anisotropy of the Knight shift in metallic tin. For the purpose of separately determining the part occupied by absorption in the line width, the authors of the present paper measured the second moment of the Sn^{119} absorption line as a function of the outer magnetic field. A nuclear-resonance spectrometer (cf. ZhETF, 40, 3, 1961) was employed for the task at liquid-helium temperatures. Measurements were made on two specimens, one of which had a grain size of 10 - 35μ and the other had a grain size of 2 - 3μ (i. e., the order of magnitude of the skin depth). Resonance

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Nuclear resonance of Sn^{119}...

absorption is dependent both on χ' and on χ'' (nuclear susceptibility $\chi = \chi' + i\chi''$), in metallic fine-disperse samples on $a\chi' + b\chi''$, where a/b is dependent upon the ratio of particle size to skin depth, and with growing grain size tends toward unity. The authors show that there must be at least one effect that reduces the influence of χ' upon the form of the resonance lines. Fig. 1 presents the absorption lines in metallic Sn^{119} for two different magnetic fields, and the curves show the integral line form. The second moment $\overline{\Delta\nu^2}$ is a function of H^2: $\overline{\Delta\nu^2} = kH^2 + \overline{\Delta\nu_0^2}$. The Knight shift is proportional to H. Hence, the part of the second moment due to the anistropy of the Knight shift must be proportional to H^2. For white tetragonally crystallizing tin, $\overline{\Delta\nu^2}_{anis} = (1/45\pi^2)\gamma^2\delta^2 H^2$, where $\delta = (\nu_{\parallel} - \nu_{\perp})/\nu_0$ expresses the anisotropy of the Knight shift; γ is the nuclear gyromagnetic ratio, $\nu_{\parallel}$ and $\nu_{\perp}$ are the resonant frequencies of

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Nuclear resonance of Sn^{119}...

Sn^{119} in an H field being parallel or perpendicular to the tetragonal axis, respectively. If the anisotropy of the Knight shift is taken to be the only cause of the field dependence of the second moment, $k = (1/45\pi^2)\gamma^2\delta^2$. According to the measurements, $\delta = (1.0 \pm 0.1).10^{-3}$. For $\overline{\Delta\nu_o^2}$ $1.2 \pm 0.2(kc/sec)^2$ is obtained; for tin in natural isotopic composition the second moment is, however (due to dipole interaction) only $0.15\ (kc/sec)^2$. This difference may be explained by taking into account the contribution to the second moment due to the exchange interaction between the Sn nuclei in the metal (cf. Ref. 8). A = 2.5 kc/sec is obtained for the constant of the indirect exchange interaction between adjoining nuclei. The authors thank Academician P. L. Kapitsa for his interest in the work, A. S. Borovik-Romanov for discussions, and N. N. Mikhaylov for assistance.
There are 2 figures and 8 references: 1 Soviet-bloc and 8 non-Soviet-bloc. The three most important references to English-language publications read as follows: Ref. 4: A. L. Schawlow, G. E. Devlin. Phys. Rev. 113,

Card 3/5

Nuclear resonance of Sn^{119}...

120, 1959; Ref. 7: N. Bloembergen, T. Rowland. Phys. Rev. 97, 1679, 1955; Ref. 8: M. A. Ruderman, C. Kittel. Phys. Rev. 96, 99, 1954.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute of Physical Problems, Academy of Sciences USSR)

SUBMITTED: December 16, 1960

Card 4/5

KARIMOV, Yu.S.; SHCHEGOLEV, I.F.

Nuclear magnetic resonance in metallic thallium. Zhur.eksp.i teor. fiz. 41 no.4:1082-1090 O '61. (MIRA 14:10)

1. Institut fizicheskikh problem AN SSSR.
(Nuclear magnetic resonance and relaxation) (Thallium)

S/020/62/146/006/015/016
B107/B186

AUTHORS: Karimov, Yu. S., Shchegolev, I. F.

TITLE: Magnetic properties of ferrocene polymers

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 6, 1962, 1370-1371

TEXT: As reported in previous papers, electron paramagnetic resonance was detected in polyethane polyferrocenes and linear polyferrocenylenes (A. N. Nesmeyanov, V. O. Morshak et al., DAN, v. 137, 1370 (1961); A. N. Nesmeyanov, A. M. Rubinshteyn et al., DAN, v. 138, 125 (1961)). In the present paper, the magnetic susceptibility of the same types of ferrocene polymers was determined for temperatures of 295 - 1.35°K and field strengths of 0-13 koe (Figs. 1 and 2). The number of uncompensated spin momenta was, however, incompatible both with the number of molecules and with the number of links per molecule. As the magnetic effects were assumed to be due to impurities, great care was exercised in obtaining samples of high purity. The polyethane polyferrocene samples were supplied by A. N. Nesmeyanov, N. S. Kochetkova, R. B. Materikova, and the linear polyferrocenylenes were prepared by A. N. Nesmeyanov, V. A. Sazonova, N. V. Drozd et al.

S/053/62/078/002/001/001
B104/B186

AUTHOR: Shchegolev, I. F.

TITLE: Studies of the electron structure of metals by nuclear magnetic resonance

PERIODICAL: Uspekhi fizicheskikh nauk, v. 78, no. 2, 1962, 267 - 290

TEXT: The results of non-Soviet and Soviet studies on the electron structure of metals, obtained by n. m. r. between 1946 and 1962 are surveyed. The first chapter deals with n. m. r. itself, with the relaxation times, and the moments of the absorption lines. The second chapter deals with the characteristics of n. m. r. in metals, with the experimental difficulties and with the interaction between nuclear spins and conduction electrons. The third chapter deals with n. m. r. in non-transition metals, the relaxation time, the Knight shift, and the indirect interaction between the nuclear spins. The fourth chapter deals with n. m. r. in transition metals, with an investigation into the non-ferromagnetic transition metals and n. m. r. in ferromagnetic metals. There are 4 figures, 5 tables, and 109 references.

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KARIMOV, Yu.S., SHCHEGOLEV, I.F.

Magnetic properties of ferrocene polymers. Dokl. AN SSSR 146 no.6:1370-1371 O '62. (MIRA 15:10)

1. Institut fizicheskikh problem im. S.I. Vavilova AN SSSR. Predstavleno akademikom P.L. Kapitsey.
(Ferrocene) (Polymers—Magnetic properties)

SHAL'NIKOV, A.I.; SHCHEGOLEV, I.F.

Temperature (to be continued). Priroda 52 no.4:11-18 '63.
(MIRA 16:4)

1. Institut fizicheskikh problem im. S.I.Vavilova AN SSSR, Moskva.

(Temperature)

SHAL'NIKOV, Aleksandr Iosifovich; SHCHEGOLEV, Igor' Fomich, kand. fiziko-matem. nauk; FAYNBOYM, I.B., red.; ATROSHCHENKO, L.Ye., tekhn. red.

[Temperature and matter] Temperatura i veshchestvo. Moskva, Izd-vo "Znanie," 1963. 28 p. (Novoe v zhizni, nauke, tekhnike. IX Seriia: Fizika i khimiia, no.9) (MIRA 16:5)

1. Chlen-korrespondent Akademii nauk SSSR (for Shal'nikov).
(Temperature) (Matter--Properties)

SHAL'NIKOV, A.I.; SHCHEGOLEV, I.F.

Temperature (conclusion). Priroda 51[i.e.52] no.5:13-21 '63.
(MIRA 16:6)

1. Institut fizicheskikh problem AN SSSR, Moskva.
(Temperature)

ACCESSION NR: AP4012572 S/0056/64/046/001/0399/0400

AUTHORS: Karimov, Yu. S.; Shchegolev, I. F.

TITLE: Investigation of the magnetic properties of dibenzenechromium and ditoluenechromium iodides at very low temperatures

SOURCE: Zhurnal eksper. i teoret. fiz., v. 46, no. 1, 1964, 399-400

TOPIC TAGS: dibenzenechromium iodide, ditoluenechromium iodide, magnetic properties, low temperature magnetic properties, magnetic susceptibility, unpaired electron proton interaction, Curie Weiss constant, proton resonance, antiferromagnetic transition, antiferromagnetic material, adiabatic demagnetization cooling

ABSTRACT: Earlier magnetic susceptibility measurements by the authors (with V. M. Chibrikin, J. Phys. Chem. Sol. v. 24, no. 12, 1963) are extended into the temperature range from 0.1 to 1.5K by constructing apparatus for the observation of proton resonance in

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ACCESSION NR: AP4012572

this range. Very low temperatures were obtained by adiabatic demagnetization of iron-ammonium alum. The apparatus is briefly described. The temperature was determined from the susceptibility of the paramagnetic salt, and a control experiment showed that the sample and salt temperatures were the same within the experimental error (+5%). On cooling from 1.5 to 0.75K the proton absorption line of the dibenzenechromium iodide (DBC) cation exhibited no anomalies but disappeared suddenly at (0.75 ± 0.03)K. A similar disappearance was observed for ditoluenechromium iodide (DTC) at (0.33 ± 0.03)K. Although the negative sign of the Curie-Weiss constant and the simple crystal structure of both compounds suggest that the disappearance may be due to a transition to the antiferromagnetic state, a careful attempt to observe a proton resonance signal in the absence of an external magnetic field was unsuccessful. Possible reasons for the absence of the signal are advanced, and it is concluded that at very low temperature DBC and DTC are not normal antiferromagnets. "We thank Academician P. L. Kapitsa and A. S.

Card 2/3

ACCESSION NR: AP4012572

Borovik-Romanov for their helpful discussions."

ASSOCIATION: Institut fizicheskikh problem AN SSSR (Institute of Physics Problems AN SSSR)

SUBMITTED: 27Nov63 DATE ACQ: 26Feb64 ENCL: 00

SUB CODE: PH NO REF SOV: 004 OTHER: 001

Card 3/3

L 16093-65 EWT(l)/EWT(m)/EPF(c)/EWP(j)/EWP(t)/EWP(b) Pc-4/Pr-4/Pt-10
IJP(c)/ESD(t)/SSD/AFWL JD/JG/GG/RM

ACCESSION NR: AP5000320 S/0056/64/047/005/1721/1726

AUTHORS: Karimov, Yu. S.; Shchegolev, I. F.

TITLE: Antiferromagnetism of dibenzene chromium iodide

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 47, no. 5, 1964, 1721-1726

TOPIC TAGS: organic paramagnet, magnetic ordering, low temperature research, antiferromagnetism, proton magnetic resonance, spin lattice relaxation, relaxation time

ABSTRACT: As part of a general search for organic paramagnets in which magnetic ordering can be observed at low temperatures, the authors investigated in detail the behavior of dibenzene chromium iodide using a modification of an instrument that permits investigation of nuclear and electronic resonances in the temperature interval from 0.08 to 1.5K, and described by the authors earlier

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L 16093-65
ACCESSION NR: AP5000320

(ZhETF v. 46, 399, 1964). The modification was made to improve the thermal contact between the cooling salt and the sample. The measurements were made at 80 Mcs frequency, and the line width was defined as the distance between the maximum values of the derivative of the absorption line. An attempt was made to observe proton resonance in a zero magnetic field, by effecting a slow frequency sweep of the threshold generator and using frequency modulation. An absorption line was observed at T = 0.19K, with two peaks, and with a signal approximately two orders of magnitude weaker than the signal in the paramagnetic region. The most probable cause of such a behavior is the appreciable increase in the spin-lattice relaxation time as the sample goes over into a magnetically ordered state, as a result of which the proton resonance can be noticeably saturated. It is concluded therefore that dibenzene chromium iodide goes over into an antiferromagnetic state at 0.75°K. The magnetic structure of the ordered state is discussed and a crystallographic structure is proposed for this substance. It is pointed out that the

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crystallographic structure of this substance is not known, but the data on the structure of ditoluol chromium iodide can be used for an estimate of the possible ordered structure. "We are grateful to Academician P. L. Kapitsa and A. S. Borovik-Romanov for interest in the work and for useful discussions. We thank V. M. Chibrikin for supplying pure samples of dibenzene chromium iodide." Orig. art. has: 5 figures and 1 formula.

ASSOCIATION: Institut fizicheskikh problem Akademii nauk SSSR (Institute of Physics Problems, Academy of Sciences SSSR)

SUBMITTED: 17Jun64 ENCL: 00

SUB CODE: EM, SS NR REF SOV: 004 OTHER: 004

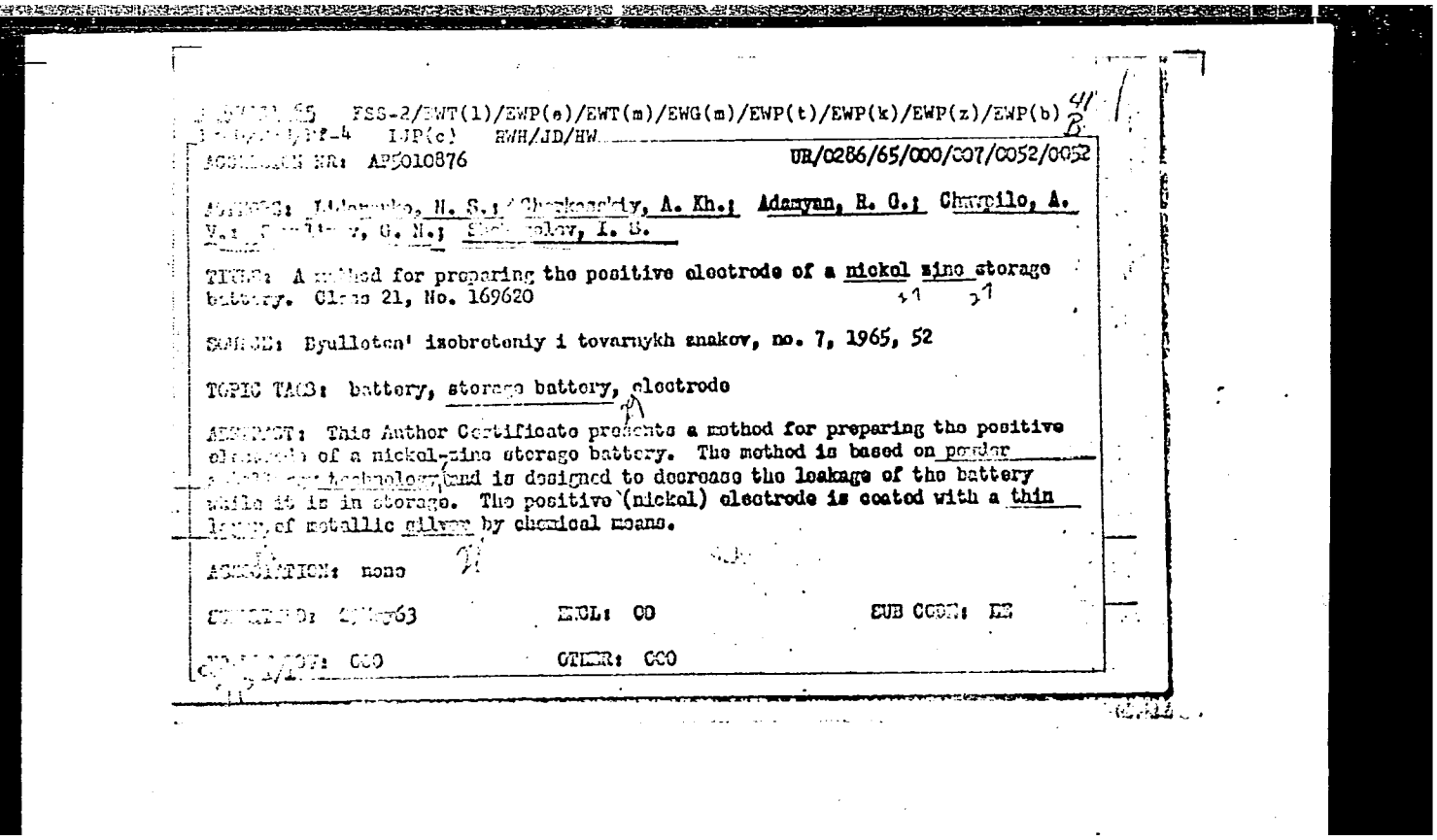
KARIM[illegible], Yu.S.; [illegible]

Antiferromagnetism of dibenzyl chromium iodide. Zhur. eksp. i teor. fiz. 43 no.5:1721-1726 N '62. (MIRA 16:2)

1. Institut fizicheskikh problem AN SSSR.

VETCHINKIN, A.N.; KARIMOV, Yu.S.; SHCHEGOLEV, I.F.

Field stabilizer for laboratory electromagnets. Prib. i tekh. eksp. 10 no.1:182-184 Ja-F '65. (MIRA 18:7)



FSS-2/EWT(l)/EWP(e)/EWT(m)/EWG(m)/EWP(t)/EWP(k)/EWP(z)/EWP(b) 41
PF-4 IJP(c) RWH/JD/HW

ACCESSION NR: AP5010876 UR/0286/65/000/007/0052/0052

AUTHOR: [illegible], N. S.; Cherkasskiy, A. Kh.; Adamyan, R. G.; Churpilo, A. V.; [illegible], G. N.; Shcherbakov, I. S.

TITLE: A method for preparing the positive electrode of a nickel zinc storage battery. Class 21, No. 169620

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 7, 1965, 52

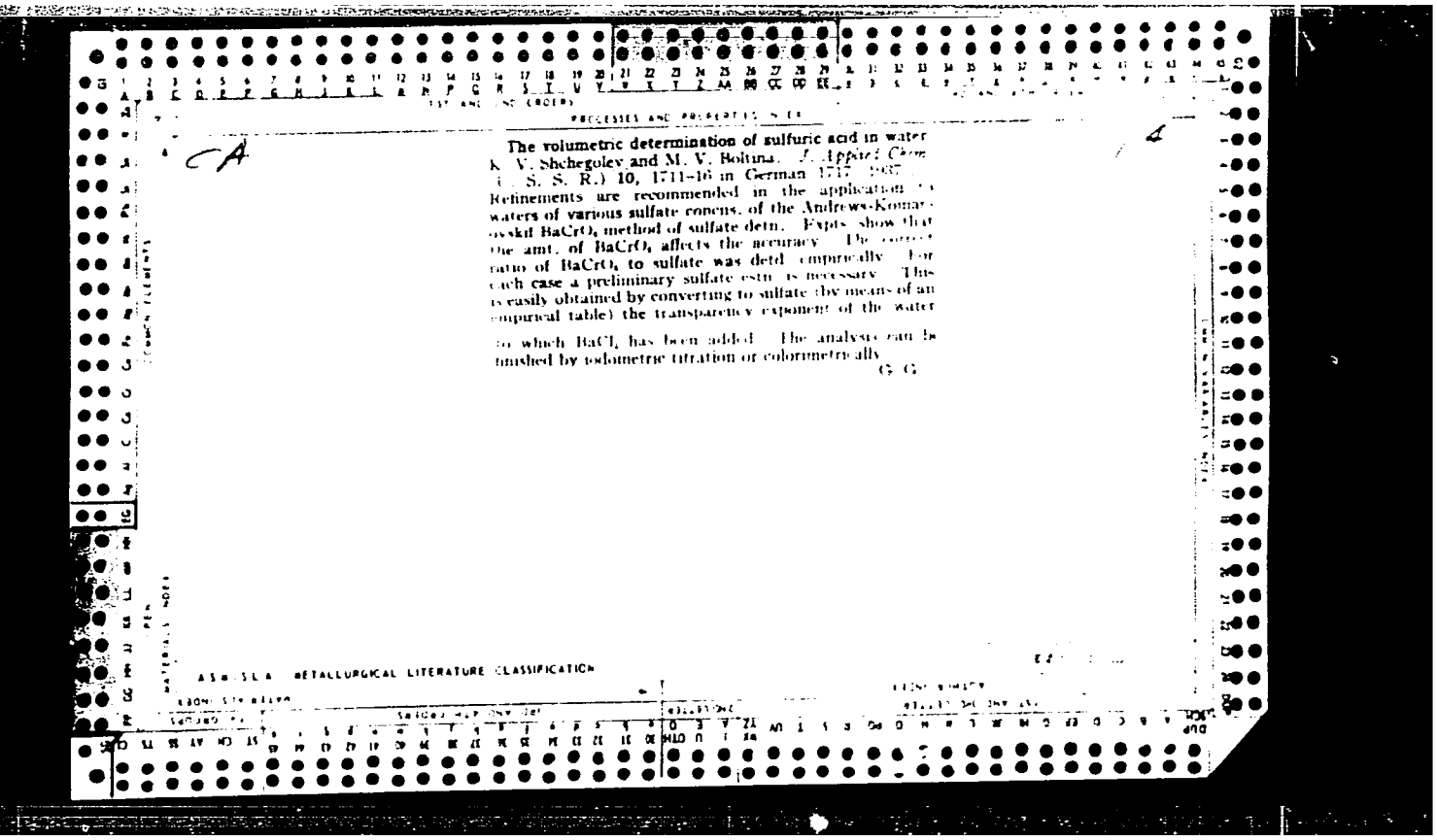
TOPIC TAGS: battery, storage battery, electrode

ABSTRACT: This Author Certificate presents a method for preparing the positive electrode of a nickel-zinc storage battery. The method is based on powder [illegible] technology and is designed to decrease the leakage of the battery while it is in storage. The positive (nickel) electrode is coated with a thin layer of metallic silver by chemical means.

ASSOCIATION: none

SUBMITTED: [illegible]63 ENCL: 00 SUB CODE: EE

NO REF SOV: 000 OTHER: 000



CA

The volumetric determination of sulfuric acid in water
K. V. Shchegolev and M. V. Boltina. *J. Applied Chem.* (U. S. S. R.) 10, 1711–16 in German 1717 (1937).
Refinements are recommended in the application to waters of various sulfate concns. of the Andrews-Komarovskii $BaCrO_4$ method of sulfate detn. Expts. show that the amt. of $BaCrO_4$ affects the accuracy. The correct ratio of $BaCrO_4$ to sulfate was detd. empirically. For each case a preliminary sulfate estn. is necessary. This is easily obtained by converting to sulfate (by means of an empirical table) the transparency exponent of the water to which $BaCl_2$ has been added. The analysis can be finished by iodometric titration or colorimetrically.
G. G.

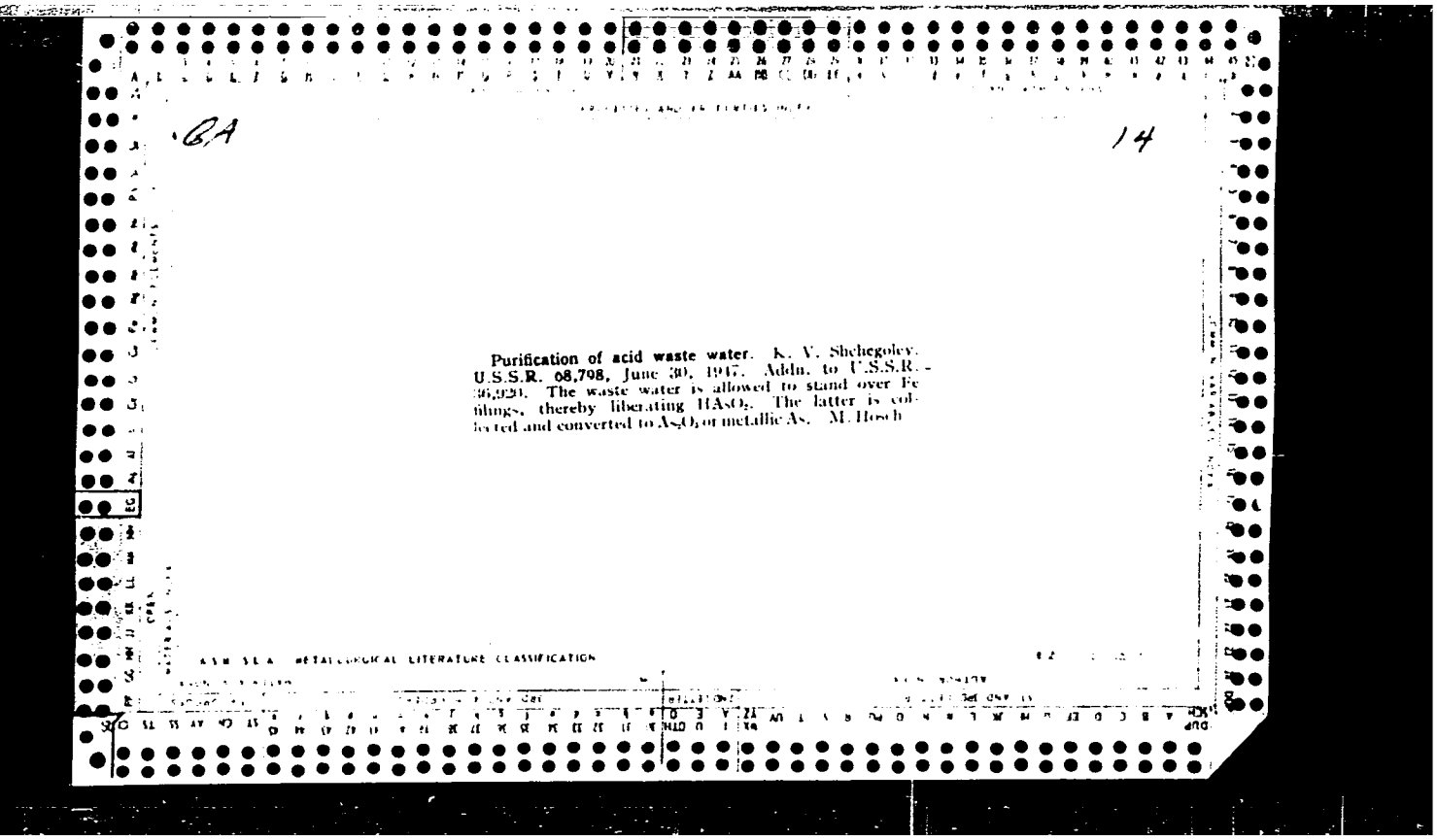
A S M - S L A METALLURGICAL LITERATURE CLASSIFICATION

14

The purification of waste waters of gas-generating stations using anthracite (coal) for fuel. K. A. [illegible]. *Vodosnabzhenie Sanit. Tekh.* 1939, No. [illegible] [illegible]; *Referat. Zhur.* 1939, No. 9, [illegible]. The losses of coal in the waste waters were 0.5%. The settlers retain 2[illegible]%, and the flood-gate waters retain 75% of the coal suspension. A total of 0.125% of the lost coal is retained in the settling tanks. The waters (when sufficiently alk.) which have been used many times (up to 25 times) for washing the gas can be added to the reservoirs only after settling.

W. R. Henn

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION



GA

14

Purification of acid waste water. K. V. Shchegolev. U.S.S.R. 68,798, June 30, 1947. Addn. to U.S.S.R. 66,920. The waste water is allowed to stand over Fe filings, thereby liberating $HAsO_2$. The latter is collected and converted to As_2O_3 or metallic As. M. Hosch

A S M S E A METALLURGICAL LITERATURE CLASSIFICATION